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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,112	02/26/2004	Ching-Wei Chang	J-SLA.1477	7586

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EXAMINER	
WASHINGTON, JAMARES	

ART UNIT	PAPER NUMBER
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/789,112	CHANG, CHING-WEI	
	Examiner	Art Unit	
	JAMARES WASHINGTON	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,3 and 4* is/are allowed.

6)☒ Claim(s) *6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Amendments and response received October 22, 2008 have been entered. Claims 1, 3, 4 and 6 are currently pending in this application. Claims 1, 3, 4 and 6 have been amended. Amendments and response are addressed hereinbelow.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Louis Mailloux (US 5383036) in view of well known prior art.

Regarding claim 6, Mailloux discloses a multi-level halftoning method for minimizing color-image physical and optical halftone dot-gain in the output of a multi-level halftone color-imaging output device (Col. 1 lines 33-37 wherein template matching is a well-known technique for controlling the size of pixels. Col. 1 lines 54-56 wherein processing is performed on the

pixels of each color separation. Col. 6 lines 30-37 indicate the technique is extended to the subpixel level thus suggesting multilevel halftone image reproduction) comprising:

characterizing that device's multi-level, halftone output, on a per-color basis (Col. 1 lines 54-56 wherein each color separation characterizes the device's halftone output), regarding geometric pixel-pattern-specific (Each color separation is provided with its own templates (Col. 2 lines 58-63), and

from that characterizing, creating and then applying to throughput color-image files, on a pixel-by-pixel basis, a pixel-to-device infeed intensity correction value based upon geometric pixel pattern considerations (Col. 7 lines 56-61 wherein the center pixel is corrected according to the matched template. Each pixel of the input image is processed in this manner. Correcting the central pixel with the enhanced subpixel pattern reads on an infeed intensity correction value as the enhanced processing is applied when there is a template match), thus to minimize multi-level, device-output dot gain both physical and optical (as previously mentioned, the well known technique is used in the art for pixel size determination/correction).

Mailloux fails to expressly disclose that the characterization is regarding geometric pixel-pattern-specific, multi-level dot gain which can be related to device per-pixel, pixel-infeed intensity levels.

Mailloux discloses that the geometric pixel patterns are used to "enhance the resolution of an output image by providing an enhanced set of bits for each bit of the input image. However, the background discusses the application of template matching for determining the size (position or number) of the pixels represented in the image, suggesting the correction of dot gain or growth.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the current invention as disclosed by Mailloux wherein template matching is utilized to enhance the resolution of the image to apply the subpixel template matching to correct intensity values of the output pixels as described in the background of the present art of record. For purposes of 35 U.S.C. 103, prior art can be either in the field of applicant's endeavor or be reasonably pertinent to the particular problem with which the applicant was concerned. Furthermore, prior art that is in a field of endeavor other than that of the applicant (as noted by the Court in KSR, "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one", 550 U.S., 82 USPQ2d at 1396, or solves a problem which is different from that which the applicant was trying to solve, may also be considered for the purposes of 35 U.S.C. 103. (The Court in KSR stated that "[t]he first error in this case was holding that courts and patent examiners should look only to the problem the patentee was trying to solve. See e.g., In re Dillon, 919 F.2d 688, 693, 16 USPQ2d 1897, 1902 (Fed. Cir. 1990) (en banc) ("[I]t is not necessary in order to establish a prima facie case of obviousness that both a structural similarity between a claimed and prior art compound (or a key component of a composition) be shown and that there be a suggestion in or expectation from the prior art that the claimed compound or composition will have the same or a similar utility as one newly discovered by applicant"); In re Lintner, 458 F.2d 1013, 1018, 173 USPQ 560, 562 (CCPA 1972) ("The fact that [applicant] uses sugar for a different purpose does not alter the conclusion that its use in a prior art composition would be prima facie obvious from the purpose disclosed in the references.")

An artisan having ordinary skill and common sense would have clearly recognized that the method as described by the prior art for enhancing image resolution by template matching would have provided the predictable results of utilizing the same templates of each color separation to characterize and correct multi-level dot gain which can be related to device per-pixel, pixel-infeed intensity levels.

Response to Arguments

3. Applicant's arguments with respect to claim 6 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

4. Claims 1, 3 and 4 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

The examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any subsequent prior art which teaches a device-specific, physical and optical dot- gain reducing method for multi-level color-image halftoning regarding the output of a selected color-imaging multi-level halftone output device with respect to which individual pixels within a dot may have different intensities comprising creating a pixel-and-

color-specific dot-gain reduction curve which relates, as data points for each output color of the device, selected corrections in device per-pixel pixel infeed intensity to different pre-selected, specific, multi-level, halftone geometric dot patterns wherein the patterns collectively represent the halftone dot-pattern population characteristics of an expected multi-level, per-pixel-intensity-corrected, halftoned color image and for each pixel, determining in which pre-selected multi-level, halftone dot pattern that pixel effectively lies and is associated as the contained subject pixel, and the output color intended for that pixel. Wherein, the created dot gain reduction curve is appropriately applied to the subject pixel thereby reducing both physical and optical dot gain contributions.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMARES WASHINGTON whose telephone number is (571) 270-1585. The examiner can normally be reached on Monday thru Friday: 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

/J. W./
Examiner, Art Unit 2625

/Jamares Washington/
Examiner, Art Unit 2625

January 3, 2009